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 present
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 August 1, 2003
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 NEWS 7 AUG 18 Simultaneous left and right truncation added to PASCAL
 NEWS 8 AUG 18 FROSTI and KOSMET enhanced with Simultaneous Left and Right
 Truncation
 NEWS 9 AUG 18 Simultaneous left and right truncation added to ANABSTR
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 NEWS 11 DEC 08 INPADOC: Legal Status data reloaded
 NEWS 12 SEP 29 DISSABS now available on STN
 NEWS 13 OCT 10 PCTFULL: Two new display fields added
 NEWS 14 OCT 21 BIOSIS file reloaded and enhanced
 NEWS 15 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced
 NEWS 16 NOV 24 MSDS-CCOHS file reloaded
 NEWS 17 DEC 08 CABA reloaded with left truncation
 NEWS 18 DEC 08 IMS file names changed

NEWS EXPRESS NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT
 MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
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FILE COVERS 1907 - 9 Dec 2003 VOL 139 ISS 24
FILE LAST UPDATED: 8 Dec 2003 (20031208/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s coal and polysaccharide

205824 COAL

35049 COALS

207632 COAL

(COAL OR COALS)

50709 POLYSACCHARIDE

62370 POLYSACCHARIDES

79139 POLYSACCHARIDE

(POLYSACCHARIDE OR POLYSACCHARIDES)

L1 147 COAL AND POLYSACCHARIDE

=> s polysaccharide (P) resin

9 POLYSACCARIDE

10 POLYSACCARIDES

19 POLYSACCARIDE

(POLYSACCARIDE OR POLYSACCARIDES)

524474 RESIN

356724 RESINS

646434 RESIN

(RESIN OR RESINS)

L2 0 POLYSACCARIDE (P) RESIN

=> del 12 y

=> s polysaccharide (P) resin

9 POLYSACCARIDE

10 POLYSACCARIDES

19 POLYSACCARIDE

(POLYSACCARIDE OR POLYSACCARIDES)

524474 RESIN

356724 RESINS

646434 RESIN

(RESIN OR RESINS)

L2 0 POLYSACCARIDE (P) RESIN

=> del 12 y

=> s resin (P) polysaccharide

524474 RESIN

356724 RESINS

646434 RESIN

(RESIN OR RESINS)

50709 POLYSACCHARIDE

62370 POLYSACCHARIDES

79139 POLYSACCHARIDE

(POLYSACCHARIDE OR POLYSACCHARIDES)

L2 1012 RESIN (P) POLYSACCHARIDE

=> s 12 and coal

205824 COAL

35049 COALS

207632 COAL

(COAL OR COALS)

L3 10 L2 AND COAL

h eb c g cg b cg

eb

=> d 13 1-10 all

L3 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

| Full Text | Citing References |
|-----------|-------------------|
|-----------|-------------------|

AN 2003:174001 CAPLUS

DN 138:224019

ED Entered STN: 07 Mar 2003

TI Synthetic fuel briquet comprising **coal** dust, water and a reactive organic compound, and a process for making such synthetic fuel

IN Cutright, Preston; Gambino, James

PA Elementis Specialties, Inc., USA

SO U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM C10L001-10

ICS C10L005-44; C10L005-12; C10L005-14

NCL 044553000; 044560000

CC 51-17 (Fossil Fuels, Derivatives, and Related Products)

Section cross-reference(s): 60

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----------------------------|------|----------|-------------------------|----------|
| <u>US 2003041509</u> | A1 | 20030306 | <u>US 2001-935107</u> | 20010823 |
| <u>DE 10230814</u> | A1 | 20030306 | <u>DE 2002-10230814</u> | 20020708 |
| <u>GB 2381003</u> | A1 | 20030423 | <u>GB 2002-16877</u> | 20020719 |
| <u>PRAI US 2001-935107</u> | A | 20010823 | | |

AB The present invention discloses a compacted synthetic fuel briquet made of at least 90% **coal** dust, water and a polymeric binder reactive with the **coal** dust to form a chem. bond with the **coal** dust and provides a product very similar to **coal**. The product surprisingly in some cases provides higher BTU value than **coal** alone (up to 5 to 1000 BTU per ton more than counterpart **coal**), does not produce the waste inorg. ash at the users' facility of (or many org. chems. such as tar) and can reduce the moisture of **coal** dust and give increased green strength.

ST fuel briquet **coal** dust water reactive polymer binder

IT IR spectroscopy

(Fourier-transform, of **coal** dust and briquets; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)

IT Anthracite

RL: TEM (Technical or engineered material use); USES (Uses)

(dust; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)

IT Strength

(green strength of briquets; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)

IT Compaction

(into briquets; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)

IT Chemisorption

(of polymer binders onto **coal** dust; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)

IT Functional groups

(oxygen-contg. groups, large increases from including additive; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)

IT Binders

h

eb c

g cg b

cg

eb

- Fuel briquets
(synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)
- IT Polysaccharides, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)
- IT **Coal** dust
RL: TEM (Technical or engineered material use); USES (Uses)
(synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)
- IT Fuels
(synthetic; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)
- IT 500881-66-3, JA 250
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(**polysaccharide resin**; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)
- IT 500886-05-5, ECOPlus
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(starch-based resin; synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)
- IT 79-06-1D, Acrylamide, copolymers contg. 79-10-7D, Acrylic acid, sodium salt, copolymers contg. 7732-18-5, Water, uses 9005-25-8D, Starch, functionalized derivs. 25085-02-3, Sodium acrylate-acrylamide copolymer 58916-80-6, Magnafloc 155 105864-14-0, JK 270 180984-23-0, JA 250-3 202289-66-5, ECO **polysaccharide resin**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(synthetic fuel comprising **coal** dust, water and reactive polymer binder, and process for making such synthetic fuel briquet)
- L3 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN
- | | Full Text | Citing References |
|----|---|-------------------|
| AN | 2000:511613 | CAPLUS |
| DN | 133:210155 | |
| ED | Entered STN: 28 Jul 2000 | |
| TI | Recovery of boron and rare metals from sea water by chemically-modified novel chitosan resins | |
| AU | Kondo, K.; Matsumoto, M. | |
| CS | Department of Chemical Engineering and Materials Science, Doshisha University, Kyoto, 610-0321, Japan | |
| SO | World Salt Symposium, 8th, The Hague, Netherlands, May 7-11, 2000 (2000), Volume 2, 1205-1206. Editor(s): Geertman, Rob M. Publisher: Elsevier Science B.V., Amsterdam, Neth. | |
| | CODEN: 69AELQ | |
| DT | Conference | |
| LA | English | |
| CC | 49-1 (Industrial Inorganic Chemicals) | |
| | Section cross-reference(s): 38, 54, 61 | |
| AB | The adsorption characteristics of B on chitosan resins are qual. investigated for the removal of B from a B mine and the desulfurizing equipment in coal -fired steam power stations. We prepd. a novel chitosan-supported sulfonic acid resin modified by propane sultone and the adsorption of metal ions is examd. by using both the crosslinked chitosan-supported sulfonic acid resin and a crosslinked chitosan resin. | |
| ST | boron recovery seawater chitosan resin; rare metal recovery seawater | |

- chitosan resin
- IT **Polysaccharides**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (chitosan modified by; recovery of boron and rare metals from sea water
 by chem.-modified novel chitosan **resins**)
- IT Adsorption
 Cation exchangers
 Seawater
 (recovery of boron and rare metals from sea water by chem.-modified
 novel chitosan resins)
- IT 7440-42-8P, Boron, preparation
 RL: PUR (Purification or recovery); PREP (Preparation)
 (recovery of boron and rare metals from sea water by chem.-modified
 novel chitosan resins)
- IT 9012-76-4, Chitosan
 RL: TEM (Technical or engineered material use); USES (Uses)
 (recovery of boron and rare metals from sea water by chem.-modified
 novel chitosan resins)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

- RE
- (1) Choi, K; Macromol Chem, Macromol Symp 1990, V33, P55 CAPLUS
 - (2) Hirotsu, T; Bull Soc Sea Water Sci Jpn 1995, V49, P202 CAPLUS
 - (3) Inukai, Y; Advances in Chitin Science 1998, V2, P513
 - (4) Inukai, Y; Anal Chim Acta 1997, V343, P275 CAPLUS
 - (5) Inukai, Y; Anal Sci 1997, V13, P221 CAPLUS
 - (6) Kondo, K; J Chem Eng Japan 1997, V30, P846 CAPLUS
 - (7) Kondo, K; Separ Sci Technol 1996, V31, P1771 CAPLUS
 - (8) Kurita, K; Kagaku Kogyo 1991, V42, P765 CAPLUS
 - (9) Lee, Y; Angew Makromol Chem 1991, V192, P169 CAPLUS
 - (10) Matsumoto, M; Separ Sci Technol 1997, V32, P983 CAPLUS
 - (11) Okay, O; Water Res 1985, V19, P857 CAPLUS
 - (12) Wolfrom, M; J Am Chem Soc 1959, V81, P1764 CAPLUS

L3 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

| Full Text | Citing References |
|-----------|-------------------|
|-----------|-------------------|

- AN 1999:273144 CAPLUS
- DN 130:326824
- ED Entered STN: 04 May 1999
- TI Adsorption mechanism of boric acid on saccharide-modified chitosan resin
- AU Matsumoto, Michiaki; Matsui, Tomotsugu; Kondo, Kazuo
- CS Department of Chemical Engineering and Materials Science, Doshisha
 University, Kyotanabe, 610-0321, Japan
- SO Journal of Chemical Engineering of Japan (1999), 32(2), 190-196
 CODEN: JCEJQA; ISSN: 0021-9592
- PB Society of Chemical Engineers, Japan
- DT Journal
- LA English
- CC 49-3 (Industrial Inorganic Chemicals)
 Section cross-reference(s): 60
- AB An environmentally-friendly resin for boron recovery is developed. The
 adsorption characteristics of boron on chitosan resins chem. modified by
 saccharides are investigated for the purpose of the removal of boron from
 a boron mine and the desulfurizing equipment in coal-fired steam power
 stations, and compared with those of a com. resin (Duolite ES371). First,
 chitosan derivs. incorporating saccharides were synthesized by reductive
 N-alkylation, and the products were crosslinked with ethylene glycol
 diglycidyl ether. The resulting products (SMC resins) were found to
 exhibit soly. in acidic and basic solns. From the adsorption expt. on the
 resins (SMC and Duolite resins), it is found that the adsorption mechanism
 is a complex formation between boron which exists as boric acid or borate
 in an aq. soln. and the vicinal diol groups of the branched saccharide.
 The apparent adsorption equil. consts. of boric acid-diol complex and
 borate-diol salt complex are detd. The adsorption isotherms of boron

correlate well with the Langmuir equation, and the order of the satd. adsorption capacity of boron on SMC resins corresponds to that of the degree of substitution on SMC resins.

- ST boric acid recovery chitosan resin adsorption; saccharide modification chitosan resin boron adsorption
- IT Wastewater treatment
(adsorption; adsorption mechanism of boric acid on saccharide-modified chitosan resin)
- IT Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(chelating; adsorption mechanism of boric acid on saccharide-modified chitosan resin)
- IT **Polysaccharides**, properties
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(chitosan modified by; adsorption mechanism of boric acid on saccharide-modified chitosan **resin**)
- IT 9012-76-4, Chitosan
RL: NUU (Other use, unclassified); USES (Uses)
(adsorption mechanism of boric acid on saccharide-modified chitosan resin)
- IT 7440-42-8P, Boron, preparation 10043-35-3P, Boric acid, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); PREP (Preparation); PROC (Process)
(adsorption mechanism of boric acid on saccharide-modified chitosan resin)
- IT 50-99-7, Glucose, properties 58-86-6, Xylose, properties 59-23-4, Galactose, properties 147-81-9, Arabinose 3458-28-4, Mannose
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(chitosan modified by; adsorption mechanism of boric acid on saccharide-modified chitosan resin)
- IT 110119-83-0, Duolite ES371
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(glucamine resin; adsorption mechanism of boric acid on saccharide-modified chitosan resin)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Domard, A; Int J Biol Macromol 1987, V9, P98 CAPLUS
- (2) Hano, T; Solv Extr Res Dev, Japan 1994, V1, P146 CAPLUS
- (3) Inukai, Y; Advances in Chitin Science 1998, V2, P513
- (4) Inukai, Y; Anal Chim Acta 1997, V343, P275 CAPLUS
- (5) Inukai, Y; Anal Sci 1997, V13, P221 CAPLUS
- (6) Kunin, R; Ind Eng Chem, Prod Res Dev 1964, V3, P304 CAPLUS
- (7) Maeda, H; Separ Sci Technol 1995, V30, P3545 CAPLUS
- (8) Matsumoto, M; J Chem Eng Japan 1998, V31, P853 CAPLUS
- (9) Matsumoto, M; Separ Sci Technol 1997, V32, P983 CAPLUS
- (10) Matsumoto, M; Value Adding through Solvent Extraction 1996, P893 CAPLUS
- (11) Okay, O; Water Res 1985, V19, P857 CAPLUS
- (12) Poslu, K; Hydrometallurgy 1983, V10, P47 CAPLUS
- (13) Rorrer, G; Ind Eng Chem Res 1993, V32, P2170 CAPLUS
- (14) Seki, H; Ind Eng Chem Res 1996, V35, P1378 CAPLUS
- (15) Sinton, S; Macromolecules 1987, V20, P2430 CAPLUS
- (16) Tsuboi, I; J Chem Eng Japan 1990, V23, P480 CAPLUS
- (17) Yalpani, M; Macromolecules 1984, V17, P272 CAPLUS
- (18) Yasuda, S; Bunseki Kagaku 1993, V42, P713 CAPLUS

L3 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

Full Text Citing References

AN 1998:780978 CAPLUS

DN 130:68874

ED Entered STN: 14 Dec 1998

TI Effect of polymeric additives to coal tar pitch on carbonization behavior and optical texture of resultant cokes

AU Brzozowska, Tatiana; Zielinski, Janusz; Machnikowski, Jacek

eb

h e b c g c g b c g

- CS Institute of Chemistry in Plock, Warsaw University of Technology, Plock,
09-400, Pol.
- SO Journal of Analytical and Applied Pyrolysis (1998), 48(1), 45-58
CODEN: JAAPDD; ISSN: 0165-2370
- PB Elsevier Science B.V.
- DT Journal
- LA English
- CC 51-19 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 38
- AB Homogeneous compns. of **coal** tar pitch with 10% addn. of various polymers
were prepd. under relatively mild conditions. The effect of a polymer on
properties of compn. and yield and optical texture of resultant semi-coke
was assessed. There was no correlation between softening point or toluene
insol. content and carbonization yield. The addn. of cumarone-indene
resin, polystyrene, poly(ethylene terephthalate), polypropylene and
polysaccharide resulted in an increase in carbonization yield by 5-3%.
Pitch-polymer compns. gave semicoke of less homogeneous optical texture
compared to parent **coal** tar pitch coke. Poly(vinyl chloride) was the
only polymer which clearly improved the development of anisotropy on
carbonization. The addn. of polypropylene, **polysaccharide** and
butadiene-styrene copolymer contributed to the deterioration of the
optical texture.
- ST **coal** tar pitch carbonization polymer additives coke quality
- IT Carbonization
Coal tar pitch
(effect of polymeric additives to **coal** tar pitch on
carbonization behavior and optical texture of resultant cokes)
- IT Coumarone-indene resins
Polyesters, uses
Polymers, uses
Polysaccharides, uses
RL: MOA (Modifier or additive use); USES (Uses)
(effect of polymeric additives to **coal** tar pitch on
carbonization behavior and optical texture of resultant cokes)
- IT Coke
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(quality of,; effect of polymeric additives to **coal** tar pitch
on carbonization behavior and optical texture of resultant cokes)
- IT 9002-86-2, Poly(vinyl chloride) 9003-07-0, Polypropylene 9003-53-6,
Polystyrene 9003-55-8, Butadiene-styrene copolymer 25038-59-9,
Poly(ethylene terephthalate), uses
RL: MOA (Modifier or additive use); USES (Uses)
(effect of polymeric additives to **coal** tar pitch on
carbonization behavior and optical texture of resultant cokes)

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Anon; PL 141756 1986 CAPLUS
- (2) Blazso, M; J Anal Appl Pyrolysis 1997, V39, P1 CAPLUS
- (3) Brooks, J; Chemistry and Physics of Carbon 1968, V4, P243 CAPLUS
- (4) Bujnowska, B; Carbon'94 Ext Abstr 1994, P80
- (5) Collin, G; Coal Science and Technology V24
- (6) Collin, G; Fuel Process Technol 1997, V50, P179 CAPLUS
- (7) Collin, G; Ullmann's Encyclopedia of Industrial Chemistry 1995, VA 26, P91
- (8) Eser, S; Carbon 1989, V27, P877 CAPLUS
- (9) Honda, H; Carbon 1988, V26, P139 CAPLUS
- (10) Kabudzinska, A; Chem Anal (Warsaw) 1996, V41, P459
- (11) Kabudzinska, A; Karbo-Energochem-Ekol 1995, V40, P290
- (12) Kubica, K; Proceedings of the Symposium on Pitch Binders 1996, P10
- (13) Lewis, I; Fuel 1982, V66, P519
- (14) Machnikowski, J; Carbon 1991, V29, P371 CAPLUS
- (15) Machnikowski, J; Koks Smola Gaz 1988, V33, P118
- (16) Marsh, H; Chemistry and Physics of Carbon 1979, V15, P229 CAPLUS
- (17) Marsh, H; Introduction to Carbon Science 1989
- (18) Marsh, H; Introduction to Carbon Technologies 1997

- (19) Menendez, R; Carbon 1997, V35, P555 CAPLUS
- (20) Mochida, I; CHEMTECH 1995, V25, P29 CAPLUS
- (21) Mochida, I; Carbon 1975, V13, P489 CAPLUS
- (22) Mochida, I; Carbon 1985, V23, P175 CAPLUS
- (23) Pajares, J; Proceedings of the Eighth ICCS 1995, V1, P1033
- (24) Skoczkowski, K; Technologia produkcji wyrobów węglowo-grafitowych 1995
- (25) Stadelhofer, J; Fuel 1981, V60, P877 CAPLUS
- (26) Taylor, G; Carbon 1993, V31, P341 CAPLUS
- (27) van Krevelen, D; Properties of Polymers 1976
- (28) Zielinski, J; ACS Div Fuel Chem 1993, V2, P927
- (29) Zielinski, J; Chemik 1994, V46, P188
- (30) Zielinski, J; Fuel 1996, V75, P1543 CAPLUS
- (31) Zielinski, J; Polimery 1993, V38, P537 CAPLUS
- (32) Zielinski, J; Polimery 1995, V40, P591 CAPLUS

L3 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

| | Full Text | Citing References |
|----|--|-------------------|
| AN | 1981:86836 CAPLUS | |
| DN | 94:86836 | |
| ED | Entered STN: 12 May 1984 | |
| TI | Gel filtration and structural characteristics of fulvic acids extracted from weathered coals | |
| AU | Chen, Rong-Feng; Wang, Tian-Li; Lin, Su-Feng; Wang, Shuan-Zhu | |
| CS | Honan Chem. Inst., Peop. Rep. China | |
| SO | Huaxue Tongbao (1980), (6), 343-5 CODEN: HHTPAU; ISSN: 0441-3776 | |
| DT | Journal | |
| LA | Chinese | |
| CC | 51-16 (Fossil Fuels, Derivatives, and Related Products) Section cross-reference(s): 73 | |
| AB | Fulvic acids were extd. from weathered coals by ion exchange with a strongly acidic resin and sepd. by flocculation with a polysaccharide and filtration. The sepd. substances were concd. by desalting for IR anal. Structural characteristics of 4 types of fulvic acids are graphically presented. | |
| ST | fulvic acid structure IR; coal fulvic acid structure | |
| IT | Coal RL: USES (Uses) (fulvic acids sepd. from weathered, structure of) | |
| IT | Fulvic acids RL: PRP (Properties) (structure of, from weathered coals) | |
| IT | Molecular structure-property relationship (IR spectra, of fulvic acids from weathered coals) | |

L3 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

| | Full Text | Citing References |
|----|--|-------------------|
| AN | 1971:124141 CAPLUS | |
| DN | 74:124141 | |
| ED | Entered STN: 12 May 1984 | |
| TI | Specific and nonspecific substances in an ordinary chernozem fulvic acid filtrate | |
| AU | Dragunov, S. S.; Murzakov, B. G.; Gostenkov, V. F. | |
| CS | Inst. Mikrobiol., Moscow, USSR | |
| SO | Pochvovedenie (1971), (2), 33-40 CODEN: PVDEAZ; ISSN: 0032-180X | |
| DT | Journal | |
| LA | Russian | |
| CC | 20 (Fertilizers, Soils, and Plant Nutrition) | |
| AB | A fulvic acid filtrate was blown through a column contg. activated charcoal and the adsorbed substances were fractionated. The following fractions were obtained: NH ₄ (A), EtOH (1), EtOH-C ₆ H ₆ (2), Me ₂ CO (3), aq. | |

(4), Me₂CO-aq. (5), NH₄ (6). Fractionation of A on activated coal produced the following addnl. fractions: EtOH (7), Me₂CO (8), aq. (9), Me₂CO-aq. (10), and NH₄ (B); the latter was sepd. on Al₂O₃ into a nonadsorbed fraction (11), fraction eluted with 2% NH₄OH (12), and a fraction desorbed with H₂SO₄ (13). The fractions were chromatographed using gas-liq. chromatog. The C/H, H/C, C/O, and O/H ratios, the org. acids, and other substances were detd. Fraction 1 was a resinous substance with many aromatic structures, the pyrolysis product of which contained large amts. of PhOH and pyrocatechol. Fractions 7 and 8 were similar to fraction 1 but had a more acid nature and **resin** acids as their dominant constituents. Fractions 4 and 9 contained several **polysaccharides**, were white powders, easily sol. in H₂O. Fraction 11 contained a considerable concn. of COOH groups; fractions 6, 12, and 13 contained H₂O-sol. org. substances. It is believed that the variability of soil humic fractions is responsible for the properties of soil org. substances and for the compn. of the soil microflora.

ST chernozem soil fulvate; soil org matter fulvate fraction; chromatog fulvate fraction soil

IT Soils

(chernozem, fulvic acids in, compn. of)

IT Fulvic acids

RL: BIOL (Biological study)

(fractionation of, chernozem soils)

L3 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

| Full Text | Citing References |
|-----------|-------------------|
|-----------|-------------------|

AN 1967:30269 CAPLUS

DN 66:30269

ED Entered STN: 12 May 1984

TI **Polysaccharide-resin** coagulants for aqueous suspensions

IN Watanabe, Hiroshi; Matsunaga, Hideo; Inoue, Masao

PA Toyo Koatsu Industries, Inc.

SO U.S., 4 pp.

CODEN: USXXAM

DT Patent

LA English

NCL 210052000

CC 46 (Surface Active Agents and Detergents)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|---|-----------------|----------|
| US 3285849 | | 19661115 | US | 19620810 |
| AB | | An aq. soln. of an inorg. salt, such as NaCl, Al ₂ (SO ₄) ₃ , FeCl ₃ , Fe ₂ O ₃ , or BaCl ₂ .H ₂ O, and a reaction product of an urea resin, such as an urea-HCHO resin (I) or urea-melamine-HCHO resin, and an modified oxidized starch the OH group of which is replaced by an OCH ₂ CH ₂ OH, OCH ₂ CH ₂ CN, OCH ₂ CH ₂ CONH ₂ , or OCH ₂ -CH ₂ CO ₂ R (R = alkyl) group is a better coagulant than an inorg. salt and the resin product alone for aq. coal dust suspensions, aq. S suspensions, or industrial waste water. Thus, 9 parts partly (73.9%) hydroxyethylated oxidized starch and 1 part 40% aq. cationic I were dissolved in H ₂ O to give a 25% soln. The pH of the soln, was adjusted to 5 and the mixt. was heated at 60° for 45 min. The product had a viscosity of 5 poises and the soln. was dild. to a solids content of 0.01%. A 7% aq. coaldust suspension was tested with NaCl and Al ₂ (SO ₄) ₃ alone, the polymer soln., and the mixt. of polymer soln. and inorg. salt. Use of a mixt. of 1-4% NaCl or Al ₂ (SO ₄) ₃ and 5-10 ppm. of the polymer product gave a clear, transparent supernatant with comparable sedimentation velocity to that obtained with the polymer product alone. The inorg. salt alone had no effect on the suspension. | | |
| ST | | COAGULANTS AQ SUSPENSIONS; UREA RESIN -STARCH COAGULANTS; SUSPENSIONS AQ COAGULANTS; MELAMINE RESIN -STARCH COAGULANTS; RESIN POLYSACCHARIDE COAGULANTS; POLYSACCHARIDE-RESIN COAGULANTS; COAL DUST SUSPENSION COAGULANTS; SULFUR SUSPENSION COAGULANTS; WASTE WATER COAGULANTS; | | |

STARCH-RESIN COAGULANTS

- IT Coagulation
(agents for, inorg. salt-melamine (or urea) condensation
product-oxidized starch as, for aq. suspensions)
- IT Coal
RL: USES (Uses)
(dust, coagulation and sedimentation of aq. suspensions of)
- IT Sedimentation
(in suspensions (aq.) by inorg. salt-melamine (or urea) condensation
product-oxidized starch)
- IT Starch, hydroxyethyl oxidized
RL: USES (Uses)
(coagulants from inorg. salt, melamine (or urea) condensation products
in, for aq. suspensions)
- IT Urea condensation products, coagulants from inorg. salts, uses and
miscellaneous
RL: USES (Uses)
(oxidized starch and, for aq. suspensions)
- IT p-Dioxane, mercury complexes
RL: USES (Uses)
(spectrum (ir) of, for)
- IT 9003-08-1 25036-13-9, uses and miscellaneous
RL: USES (Uses)
(coagulants from inorg. salts, oxidized starch and, for aq.
suspensions)
- IT 7647-14-5, uses and miscellaneous 7705-08-0, uses and miscellaneous
10043-01-3 10361-37-2, uses and miscellaneous
RL: USES (Uses)
(coagulants from melamine (or urea) condensation products, oxidized
starch and)

L3 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

| Full Text | Citing References |
|--------------|----------------------|
|--------------|----------------------|

AN 1963:14101 CAPLUS

DN 58:14101

OREF 58:2296d-e

ED Entered STN: 22 Apr 2001

TI Gravimetric investigations of the decomposition behavior of low-rank fuels

AU Abel, Otto; Luther, Horst

CS Bergakad., Clausthal/Harz, Germany

SO Erdoel und Kohle (1962), 15(2), 90-5

CODEN: ERKOAJ; ISSN: 0367-1305

DT Journal

LA Unavailable

CC 26 (Coal and Coal Derivatives)

AB By thermogravimetric investigations of sugars, **polysaccharides**,
celluloses, lignins, humic acids, and bitumens of peats and brown **coals**,
correlations were made of the max. of the degasification ranges of these
substances with the decompn. peaks of the following classes of compds.:
200°, 210°, and 225° sugars; 240°
polysaccharides and tannins; 260° hemieelluloses,
polysaccharides, and **resins**; 280° hemicelluloses; 295°
celluloses; 320° lignins; 335° and 350° lignins,
humic acids, humins, and bitumens; 375° humic acids, humins,
bitumens, and lignins; 395°, 405°, and 425° bitumens
and humins.

IT Radioelements

(absorption of, by coal)

IT Coal, brown and(or) Lignitous coal

(bitumen of, thermal decompn. of)

IT Peat

(bitumens of, thermal decompn. of)

IT Bitumens

h

eb c

g cg b

cg

eb

Humins
Resins
(decompn. by heat)
IT Humic acids
Sugars
Tannins
(decompn. of, by heat)
IT Polysaccharides
(decompn., by heat)
IT 9004-34-6, Cellulose 9005-53-2, Lignin 9034-32-6, Hemicellulose
(decompn., by heat)

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| | Full Text | Citing References |
|------|--|-------------------|
| AN | 1959:69586 | CAPLUS |
| DN | 53:69586 | |
| OREF | 53:12633a-b | |
| ED | Entered STN: 22 Apr 2001 | |
| TI | Improvement of the clarification of wash water by the addition of flocculating agents | |
| AU | v. Pelser-Berensberg, B.; Schuster, A.; Thone, L. | |
| SO | Aachener Bl. Aufbereiten-Verkoken-Brikett. (1956), 6, 65-88 | |
| | From: Fuel Abstr. 20, Abstr. No. 3606(1956) | |
| DT | Journal | |
| LA | Unavailable | |
| CC | 21 (Fuels and Coal Products) | |
| AB | Expts. were made on the use of materials such as polysaccharides and resins in the presence of electrolytes, for clarification of wash water for coal prepn. | |
| IT | Coal (cleaning or washing of, of Bureinskii) | |
| IT | Coal (cleaning or washing of, water treatment for) | |
| IT | <u>7732-18-5</u> , Water (purification or conditioning of, coagulation, for coal washing) | |

L3 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2003 ACS on STN

| | Full Text | Citing References |
|------|---|-------------------|
| AN | 1924:6154 | CAPLUS |
| DN | 18:6154 | |
| OREF | 18:849h-i | |
| ED | Entered STN: 16 Dec 2001 | |
| TI | Chemistry of Japanese plants. II. Composition of fossil wood | |
| AU | Komatsu, Shigeru; Ueda, Hidenosuke | |
| SO | Mem. Col. Sci. Kyoto. Imp. Univ. (1923), 7A, 7-13 | |
| DT | Journal | |
| LA | Unavailable | |
| CC | 11D (Biological Chemistry: Botany) | |
| AB | The investigation was undertaken to throw light on the mechanism of coal formation. The fossil wood, umoregi (A), [which is apparently brown lignite rather than fossil wood--Abstractor] presumably belongs to a species of Sequoia; hence the analyses of A were compared with analytical data obtained in the case of redwood (Sequoia sempervirens). A contained 1.03% ash, approx. 6% resin , 1.8% methyl-pentosans, 5.1% polysaccharides other than cellulose, 56.2% lignin, 29.4% cellulose. Apparently pentosans were absent. Ultimate analysis showed C 61, H 6.0, S 0.8 and ash 2.8%. The resin contained 73.8% C and 6.65% H. It is evident that in the process of change from wood to "umoregi" 20% of cellulose and 4% of other polysaccharides are destroyed and the lignin content is increased by about 25%. Approx. 2% resin is accumulated during the change. | |